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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WILSON, ROBERT W	

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/867,175	PFEFFER ET AL.	
	Examiner	Art Unit	
	Robert W. Wilson	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/25/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 15-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 15-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1.0 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.0 Claims 1, 12, 15, & 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Quigley (U.S. Patent No.: 6,650,624)

Referring to claim 1, Quigley teaches: A point to multipoint per col. 9 line 2 network shown in Figures 1 & 2 comprising: a head-end station (1012 per Fig 1 & Fig 2); at least one subscriber station (12 per Fig 2); a point to multipoint (col. 9 line 2) network is the HFC network (1010 per Fig 2) or shared medium between each subscriber station (12 per Fig 2) and the head-end station (1012 per Fig 2). The applicant broadly claims "without segmentation" in the claim as well as in the specification. Each subscriber station (12 per Fig 2) is arranged to transmit data that has been previously segmented into packet switched protocol packets (410 per Fig 68) to the head-end (1012 per Fig 2) being arranged to allocated a number of consecutive time slots has shown in Fig 68. Each subscriber station (12 per Fig 2) having inherent framing apparatus arranged to frame a packet of any length or at least 576 bytes without segmentation of the packet per col. 63 line 46-col. 63 line 51. The inherent synchronization apparatus in the system provides consecutive time slots and a guard band which has been determined without providing additional synchronization or ranging as shown in Fig 68 and per col. 62 line 46-col. 63 line 51.

In Addition Quigley teaches:

Regarding claim 12, point to multipoint network per col. 9 line 2.

Referring to claim 15, Quigley teaches: a head-end station (1012 per Fig 1 & Fig 2) for a point to multipoint (col. 9 line 2) network (HFC network or 1010 per Fig 2) providing shared medium between each subscriber station (12 per Fig 2) and the head-end station (1012 per Fig 2). The applicant broadly claims "without segmentation" in the claim as well as in the specification. The headend station (1012 per Fig 2) being arranged to allocate a number of consecutive time slots to each subscriber station (12 per Fig 2) as shown in Fig 68 for a frame a packet of any length or at least 576 bytes without segmentation of the packet per col. 63 line 46-col. 63 line 51. The headed (1012 per Fig 1) determines guard band without providing additional synchronization or ranging as shown in Fig 68 and per col. 62 line 46-col. 63 line 51. The head-end station (1012 per Figs 1 & 2 has inherent apparatus which can extract the packet (410 per Fig 68) from the frame (slots per Fig 68).

Referring to claim 17, Quigley teaches: the method of operating a point to multipoint per col. 9 line 2 network shown in Figures 1 & 2 arranged comprising a head-end station (1012 per Fig 1 & 2) and at least one subscriber station (12 per Fig 2) and a point to multipoint per col. 9 line 2 network (HFC network 1010 per Fig 2) . The HFC network is a fiber network which provides optical connectivity between each subscriber station (12 per Fig 2) and the head-end station (1012 per Figs 1 & 2). Figure 68 shows transmitting upstream using a packet switched transport protocol (410 per Fig 68) over a TDMA protocol having a number of consecutive time slots (First time slot and second time slot per Fig 68) allocated to each subscriber station (12 per Fig

2). The applicant broadly claims "without segmentation" in the claim as well as in the specification. Each subscriber station (12 per Fig 2) is arranged to transmit data that has been previously segmented into packet switched protocol packets (410 per Fig 68) to the head-end (1012 per Fig 2) being arranged to allocated a number of consecutive time slots has shown in Fig 68. The guard bands are determined without additional synchronization or ranging. A packet of any length or at least 576 bytes is sent during the allocation of consecutive time slots as shown in Fig 68 and per col. 62 line 46-col. 63 line 51.

Claim Rejections - 35 USC § 103

3.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.0 Claims 2-5 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley (U.S. Patent No.: 6,650,624) in view of Data-over-Cable Service Interface Specification

Referring to claim 2, Quigley teaches: A point-to-multipoint network arrangement according to claim 1,
Quigley does not expressly call for: in which the packet-switched transport protocol employs packets formatted according to an Ethernet protocol

Data-over-Cable Service Interface Specification teaches: in which the packet-switched transport protocol employs packets formatted according to an Ethernet protocol (Pgs 11-20 and 47-54)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Ethernet protocol of Data-over-Cable Service Interface Specification to the point-to-multipoint network of Quigley in order to be standards compliant.

Referring to claim 3, Quigley teaches: A point-to-multipoint network arrangement according to claim 1,

Quigley does not expressly call for: in which the packet-switched transport protocol is arranged to carry Internet Protocol data

Data-over-Cable Service Interface Specification teaches: in which the packet-switched transport protocol is arranged to carry Internet Protocol data (Pgs 1-2, 11-12, & 16)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the Internet protocol of Data-over-Cable Service Interface Specification to the point-to-multipoint network of Quigley in order to be standards compliant.

Referring to claim 4, Quigley teaches: A point-to-multipoint network arrangement according to claim 1,

Quigley does not expressly call for: in which the packet-switched transport protocol is arranged to carry unsegmented Ethernet frames

Data-over-Cable Service Interface Specification teaches: in which the packet-switched transport protocol is arranged to carry unsegmented Ethernet frames (The examiner has interpreted segmentation as the cutting up of Ethernet packets before they are inserted into the MAP PDU. On Pg 53 in Para 6.2.2 the spec teaches that the MAC sublayer must be able to support a variable-length Ethernet type PDU across the whole network in its entirety per Pg 53. The examiner interprets this to mean that the Ethernet PDU does not need to be segmented)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the unsegmented Ethernet of Data-over-Cable Service Interface Specification to the point-to-multipoint network of Quigley in order to be standards compliant.

Referring to claim 5, Quigley teaches: A point-to-multipoint network arrangement according to claim 1,

Quigley does not expressly call for: in which the TDMA protocol employs frames each arranged to carry multiple packet-switched transport protocol packets

Data-over-Cable Service Interface Specification teaches: in which the TDMA protocol employs frames each arranged to carry multiple packet-switched transport protocol packets (MPEG, Ethernet, or ATM per Pgs 49-57 or multiple packet protocols)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the multiple packet-switched transport of Data-over-Cable Service Interface Specification to the point-to-multipoint network of Quigley in order to be standards compliant

Referring to claim 11, Quigley teaches: A point-to-multipoint network arrangement according to claim 1,

Quigley does not expressly call for in which each subscriber station is allocated to one of a plurality of groups, each group transmitting on a distinct physical channel

Data-over-Cable Service Interface Specification teaches: in which each subscriber station is allocated to one of a plurality of groups, each group transmitting on a distinct physical channel (Channel ID or distinct physical channel per Pg 75)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add plurality of groups of Data-over-Cable Service Interface Specification to the point-to-multipoint network of Quigley in order to be standards compliant

5.0 Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley (U.S. Patent No.: 6,650,624) in view of Rabenko (U.S. Patent No.: 6,834,057).

Referring to claim 6, Quigley teaches: the a point-to-multipoint network arrangement according to claim 1,
Quigley does not expressly call for: at least one subscriber station is arranged to periodically receive synchronization signals transmitted form the head end-station.
Rabenko teaches: at least one subscriber station is arranged to periodically receive synchronization signals transmitted form the head end-station per Fig 11 or col. 7 lines 30-36.
It would have been obvious to one of ordinary skill in the art at the time of the invention to add the synchronization or Rabenko to the point-to multipoint network arrangement of Quigley in order to insure that timing between the headend and subscriber station are coordinate so that communication can be performed.
Referring to claim 7, Quigley teaches: the a point-to-multipoint network arrangement according to claim 1,
Quigley does not expressly call for: in which differential time delays arising form differing path lengths between the head-end and the outstation are absorbed by including guard bands in the TDMA protocol
Rabenko teaches: which differential time delays arising form differing path lengths between the head-end and the outstation are absorbed by including guard bands in the TDMA protocol per col. 7 line 65-col. 8 line 5.
It would have been obvious to add the guard bands of Rabenko to the point-to-multipoint network of Quigley which inherently compensated for differential time delays arising form differing paths in order to insure that there are no collisions between the packets which are extracted frames.

6.0 Claims 8-9 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley (U.S. Patent No.: 6,650,624) in view of Cohen (U.S. Patent No.: 5,699,176).

Referring to claim 8, Quigley teaches: the a point-to-multipoint network arrangement according to claim 1,
Quigley does not expressly call for: point-to-multipoint network is optical

Cohen teaches: point-to-multipoint network is optical per fig 3 or per col. 4 line 35-45.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an optical network to implement the point-to multipoint network of Quigley because optical network has better reliability than an HFC network.

Referring to claim 9, the combination of Quigley and Cohen teach: the a point-to-multipoint network arrangement according to claim 8,
The combination of Quigley and Cohen not expressly call for: optical network is passive
Cohen teaches: optical network is passive per col. 4 line 35-45.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the passive optical of Cohen to the optical point-to-multipoint network the combination of Quigley and Cohen because a PON has the advantage of connecting a moderate number of feeder fibers to the distribution node which is better than a fiber network.

Referring to claim 13, the Quigley teaches: the a point-to-multipoint network arrangement according to claim 12,
Quigley does not expressly call for: point-to-multipoint network is passive optical
Cohen teaches: point-to-multipoint network is passive optical per col. 4 line 35-45.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the passive optical of Cohen to the optical point-to-multipoint network the Quigley because a passive optical point-to-multipoint network is a very reliable point-to-multipoint network.

7.0 Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley (U.S. Patent No.: 6,650,624) in view of Raissinia (U.S. Patent No.: 6,430,193)

Referring to claim 10, Quigley teaches: A point-to-multipoint network arrangement according to claim 1,

Quigley does not expressly call for: in which the point-to-multipoint network is one of a wireless network

Raissinia teaches :in which the point-to-multipoint network is a wireless network per Fig1 or col. 3 line 64-col. 4 line 63.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add point-to-multipoint network wireless network of Raissinia to the point-to-multipoint network or Quigley because wireless network is less expensive to provide to the subscribers because it does not require laying expensive underground cable or fiber in order to connect to a subscriber.

Response to Amendment

8.0 Applicant's arguments with respect to claims 1-13 & 15-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9.0 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W. Wilson whose telephone number is 571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571/272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert W. Wilson

Robert W Wilson
Examiner
Art Unit 2616

RWW
4/26/06

KEVIN C. HARPER
PATENT EXAMINER